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EXAMINER TORRES, JUAN A				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/530,368

Applicant(s)

SUDO, HIROAKI

Examiner

JUAN A. TORRES

Art Unit

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 April 2005.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-37 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 06 April 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/ISD)
Paper No(s)/Mail Date 04/06/2005
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

The information disclosure statement (IDS) submitted on 04/06/2005 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Drawings

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: "303" (see figure 3). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either

"Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure is objected to because uses form and legal phraseology often used in patent claims, such as "means". Correction is required. See MPEP § 608.01(b).

The disclosure is objected to because of the following informalities:

a) The recitation "OFDM" in page 1 line 15 seems to be improper because this acronym has not been introduced previously; it is suggested to be changed to "Orthogonal Frequency Division Multiplexing (OFDM)"

b) The recitation "TDD" in page 41 line 25 seems to be improper because this acronym has not been introduced previously; it is suggested to be changed to "Time Division Duplex (TDD)"

Appropriate correction is required.

The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 24-28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 24-28 recites the limitation "said selection section" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 31-37 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. .

Regarding claim 31-37, claims 31-37 are rejected under 35 U.S.C. 101 as not falling within one of the four statutory categories of invention. While the claims recite a series of steps or acts to be performed, a statutory "process" under 35 U.S.C. 101 must (1) be tied to another statutory category (such as a particular apparatus), or (2) transform underlying subject matter (such as an article or material) to a different state or thing (Reference the May 15, 2008 memorandum issued by Deputy Commissioner for Patent Examining Policy, John J. Love, titled "Clarification of 'Processes' under 35 U.S.C. 101"). The instant claims neither transform underlying subject matter nor positively tie to another statutory category that accomplishes the claimed method steps, and therefore do not qualify as a statutory process.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 9-12, 29-31 and 33-34 are rejected under 35 U.S.C. 102(b) as being anticipated by Nagaoka (US 20010012322 A1).

Regarding claims 1 and 29-31, Nagaoka discloses a dividing section that divides transmit data into high-quality transmit data for which good quality is required and ordinary transmit data other than said high-quality transmit data (figure 1 block 101 paragraphs [0083]-[0086]); a rearranging section that rearranges said transmit data so that said high-quality transmit data is allocated to a subcarrier in the vicinity of a center

frequency (figure 1 block 103 paragraphs [0083]-[0086]); and an orthogonal frequency division multiplexing section that performs orthogonal frequency division multiplexing of said transmit data rearranged by said rearranging section and allocates said transmit data to subcarriers (figure 1 block 103 paragraphs [0083]-[0086]).

Regarding claims 9 and 33, Nagaoka discloses claims 1 and 31, Nagaoka also discloses a modulation section that modulates said high-quality transmit data and said ordinary transmit data using independently set modulation methods (paragraph [0091]).

Regarding claim 10, Nagaoka discloses claim 9, Nagaoka also discloses fixing a modulation method of either said high-quality transmit data or said ordinary transmit data, and adaptively changes a modulation method of the other of said high-quality transmit data or said ordinary transmit data (paragraphs [0089]-[0091]).

Regarding claim 11, Nagaoka discloses claim 9, Nagaoka also discloses adaptively changes a modulation method of both said high-quality transmit data and said ordinary transmit data (paragraphs [0089]-[0091]).

Regarding claims 12 and 34, Nagaoka discloses claims 9 and 33, Nagaoka also discloses selects a modulation method in accordance with an adjacent hannel interference wave reception level (paragraphs [0089]-[0091]).

Claims 1, 14, 29, 30 and 31 are rejected under 35 U.S.C. 102(b) as being anticipated by Kunieda (JP 2000269918 A).

Regarding claims 1 and 29-31, Kunieda discloses a dividing section that divides transmit data into high-quality transmit data for which good quality is required and ordinary transmit data other than said high-quality transmit data (figures 1 and 7 block

21 paragraphs [0045]-[0047]); a rearranging section that rearranges said transmit data so that said high-quality transmit data is allocated to a subcarrier in the vicinity of a center frequency (figures 1 and 7 block 2 paragraphs [0045]-[0047]); and an orthogonal frequency division multiplexing section that performs orthogonal frequency division multiplexing of said transmit data rearranged by said rearranging section and allocates said transmit data to subcarriers (figures 1 and 7 block 3 paragraphs [0045]-[0047]).

Regarding claim 14, Kunieda discloses claim 1, Kunieda also discloses ordinary transmit data is allocated to a subcarrier containing a DC point (figures 5-8 paragraph [0045]-[0047]).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 9-13, 20-22, 29-31, 33-36 are rejected under 35 U.S.C. 102(b) as being anticipated by Lee (US 20030060173 A1) in view of Nagaoka (US 20010012322 A1).

Regarding claims 1 and 29-31, Lee discloses a dividing section that divides transmit data into high-quality transmit data for which good quality is required and ordinary transmit data other than said high-quality transmit data (figures 3, 11, 13 and 15 block 80 paragraph [0083]); and an orthogonal frequency division multiplexing section that performs orthogonal frequency division multiplexing of said transmit data

rearranged by said rearranging section and allocates said transmit data to subcarriers ((figures 3, 11, 13 and 15 block 84 paragraph [0007]). Lee doesn't disclose a rearranging section that rearranges said transmit data so that said high-quality transmit data is allocated to a subcarrier in the vicinity of a center frequency. Nagaoka discloses a rearranging section that rearranges said transmit data so that said high-quality transmit data is allocated to a subcarrier in the vicinity of a center frequency (figure 1 block 103 paragraphs [0083]-[0086]). Lee and Nagaoka teachings are analogous art because they are from the same field of endeavor of communications. At the time of the invention it would have been obvious to a person of ordinary skill in the art to integrate the rearranging discloses by Nagaoka with the system disclosed by Lee. The suggestion/motivation for doing so would have been to improve the performance of the system using better frequencies for the high-quality data (Nagaoka paragraph [0091]).

Regarding claims 9 and 33, Lee and Nagaoka disclose claims 1 and 31, Lee also discloses a modulation section that modulates said high-quality transmit data and said ordinary transmit data using independently set modulation methods (paragraph [0017] and [0085]).

Regarding claim 10, Lee and Nagaoka disclose claim 9, Lee also discloses fixing a modulation method of either said high-quality transmit data or said ordinary transmit data, and adaptively changes a modulation method of the other of said high-quality transmit data or said ordinary transmit data (paragraph [0017] and [0085]).

Regarding claim 11, Lee and Nagaoka disclose claim 9, Lee also discloses f adaptively changes a modulation method of both said high-quality transmit data and said ordinary transmit data (paragraph [0017]).

Regarding claims 12 and 34, Lee and Nagaoka disclose claims 9 and 33, Lee also discloses selects a modulation method in accordance with an adjacent channel interference wave reception level (paragraph [0017]).

Regarding claims 13 and 36, Lee and Nagaoka disclose claims 1 and 31, Lee also discloses independently interleaves said high-quality transmit data and said ordinary transmit data, wherein said rearranging section rearranges said transmit data after interleaving (figures 3 and 4 paragraph [0084] and [0091]).

Regarding claim 20, Lee and Nagaoka disclose claim 1, Lee also discloses a coding section that turbo-codes said transmit data, wherein said high-quality transmit data is systematic bit data and said ordinary transmit data is parity bit data (paragraph [0006]).

Regarding claims 21 and 35, Lee and Nagaoka disclose claims 1 and 31, Lee also discloses high-quality transmit data is transmit data that is transmitted to a distant communicating party, and said ordinary transmit data is transmit data that is transmitted to a nearby communicating party (figures 1 and 15 far UE will send back low power so H will be used, close UE will send high power so L will be used paragraph [0006]).

Regarding claim 22, Lee and Nagaoka disclose claim 1, Lee also discloses high-quality transmit data is information used for communication control or retransmission information (paragraph [0067]).

Claims 2-9, 12, 19 and 33-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kunieda as applied to claims 1 and 31 above, and further in view of Sudo (JP 2001156744 A).

Regarding claim 2, Kunieda discloses claim 1, Kunieda doesn't disclose a spreading section that performs spreading processing of said transmit data rearranged by said rearranging section, wherein said orthogonal frequency division multiplexing section performs orthogonal frequency division multiplexing of said transmit data that has undergone spreading processing and allocates said transmit data to subcarriers. Sudo discloses a spreading section that performs spreading processing of said transmit data rearranged by said rearranging section, wherein said orthogonal frequency division multiplexing section performs orthogonal frequency division multiplexing of said transmit data that has undergone spreading processing and allocates said transmit data to subcarriers (abstract, figure 1 paragraphs [0047]-[0049]). Kunieda and Sudo teachings are analogous art because they are from the same field of endeavor of communications. At the time of the invention it would have been obvious to a person of ordinary skill in the art to integrate the spreading discloses by Sudo with the system disclosed by Kunieda. The suggestion/motivation for doing so would have been to improve the performance of the system (Sudo abstract).

Regarding claim 3, Kunieda and Sudo disclose claim 2, Sudo also discloses independently sets spreading ratios of said high-quality transmit data and said ordinary transmit data (paragraphs [0062]-[0064]). Kunieda and Sudo teachings are analogous art because they are from the same field of endeavor of communications. At the time of

the invention it would have been obvious to a person of ordinary skill in the art to integrate the spreading discloses by Sudo with the system disclosed by Kunieda. The suggestion/motivation for doing so would have been to improve the performance of the system (Sudo abstract).

Regarding claim 4, Kunieda and Sudo disclose claim 2, Sudo also discloses a spreading ratio of said high-quality transmit data greater than a spreading ratio of said ordinary transmit data (paragraphs [0062]-[0064]). Kunieda and Sudo teachings are analogous art because they are from the same field of endeavor of communications. At the time of the invention it would have been obvious to a person of ordinary skill in the art to integrate the spreading discloses by Sudo with the system disclosed by Kunieda. The suggestion/motivation for doing so would have been to improve the performance of the system (Sudo abstract).

Regarding claim 5, Kunieda and Sudo disclose claim 2, Sudo also discloses code multiplexing numbers of said high-quality transmit data and said ordinary transmit data are set independently (paragraphs [0062]-[0064]). Kunieda and Sudo teachings are analogous art because they are from the same field of endeavor of communications. At the time of the invention it would have been obvious to a person of ordinary skill in the art to integrate the spreading discloses by Sudo with the system disclosed by Kunieda. The suggestion/motivation for doing so would have been to improve the performance of the system (Sudo abstract).

Regarding claim 6, Kunieda and Sudo disclose claim 2, Sudo also discloses a code multiplexing number of said high-quality transmit data is made smaller than a code

multiplexing number of said ordinary transmit data (paragraphs [0062]-[0064]). Kunieda and Sudo teachings are analogous art because they are from the same field of endeavor of communications. At the time of the invention it would have been obvious to a person of ordinary skill in the art to integrate the spreading discloses by Sudo with the system disclosed by Kunieda. The suggestion/motivation for doing so would have been to improve the performance of the system (Sudo abstract).

Regarding claim 7, Kunieda and Sudo disclose claim 2, Sudo also discloses numbers of spreading codes assigned to said high-quality transmit data and said ordinary transmit data are set independently (paragraphs [0062]-[0064]). Kunieda and Sudo teachings are analogous art because they are from the same field of endeavor of communications. At the time of the invention it would have been obvious to a person of ordinary skill in the art to integrate the spreading discloses by Sudo with the system disclosed by Kunieda. The suggestion/motivation for doing so would have been to improve the performance of the system (Sudo abstract).

Regarding claim 8, Kunieda and Sudo disclose claim 2, Sudo also discloses number of spreading codes assigned to said high-quality transmit data is made greater than a number of spreading codes assigned to said ordinary transmit data (paragraphs [0062]-[0064]. High-quality). Kunieda and Sudo teachings are analogous art because they are from the same field of endeavor of communications. At the time of the invention it would have been obvious to a person of ordinary skill in the art to integrate the spreading discloses by Sudo with the system disclosed by Kunieda. The

suggestion/motivation for doing so would have been to improve the performance of the system (Sudo abstract).

Regarding claims 9 and 33, Kunieda discloses claims 1 and 31, Kunieda doesn't disclose modulating said high-quality transmit data and said ordinary transmit data using independently set modulation methods. Sudo discloses modulating said high-quality transmit data and said ordinary transmit data using independently set modulation methods (abstract, figure 1 paragraphs [0047]-[0049]). Kunieda and Sudo teachings are analogous art because they are from the same field of endeavor of communications. At the time of the invention it would have been obvious to a person of ordinary skill in the art to integrate the spreading discloses by Sudo with the system disclosed by Kunieda. The suggestion/motivation for doing so would have been to improve the performance of the system (Sudo abstract).

Regarding claims 12 and 34, Kunieda and Sudo disclose claims 9 and 33, Sudo also discloses a modulation method in accordance with an adjacent channel interference wave reception level (abstract, figure 1 paragraphs [0047]-[0049]). Kunieda and Sudo teachings are analogous art because they are from the same field of endeavor of communications. At the time of the invention it would have been obvious to a person of ordinary skill in the art to integrate the spreading discloses by Sudo with the system disclosed by Kunieda. The suggestion/motivation for doing so would have been to improve the performance of the system (Sudo abstract).

Regarding claim 32, Kunieda discloses claim 31, Kunieda doesn't disclose a spreading said transmit data. Sudo spreading said transmit data (abstract, figure 1

paragraphs [0047]-[0049]). Kunieda and Sudo teachings are analogous art because they are from the same field of endeavor of communications. At the time of the invention it would have been obvious to a person of ordinary skill in the art to integrate the spreading discloses by Sudo with the system disclosed by Kunieda. The suggestion/motivation for doing so would have been to improve the performance of the system (Sudo abstract).

Regarding claim 19, Kunieda discloses claim 1, Kunieda doesn't disclose a orthogonal frequency division multiplexing section narrowing a range of subcarriers to which said high-quality transmit data is allocated when an adjacent channel interference wave reception level increases. Sudo discloses a orthogonal frequency division multiplexing section narrowing a range of subcarriers to which said high-quality transmit data is allocated when an adjacent channel interference wave reception level increases (abstract, figure 1 paragraphs [0047]-[0049]). Kunieda and Sudo teachings are analogous art because they are from the same field of endeavor of communications. At the time of the invention it would have been obvious to a person of ordinary skill in the art to integrate the spreading discloses by Sudo with the system disclosed by Kunieda. The suggestion/motivation for doing so would have been to improve the performance of the system (Sudo abstract).

Claims 2-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kunieda as applied to claim 1 above, and further in view of Hayama (US 20020003787 A1).

Regarding claim 2, Kunieda discloses claim 1, Kunieda doesn't disclose a spreading section that performs spreading processing of said transmit data rearranged by said rearranging section, wherein said orthogonal frequency division multiplexing section performs orthogonal frequency division multiplexing of said transmit data that has undergone spreading processing and allocates said transmit data to subcarriers. Hayama discloses a spreading section that performs spreading processing of said transmit data rearranged by said rearranging section, wherein said orthogonal frequency division multiplexing section performs orthogonal frequency division multiplexing of said transmit data that has undergone spreading processing and allocates said transmit data to subcarriers (abstract, figure 8 paragraphs [0006] and [0059]-[0062]). Kunieda and Hayama teachings are analogous art because they are from the same field of endeavor of communications. At the time of the invention it would have been obvious to a person of ordinary skill in the art to integrate the spreading discloses by Hayama with the system disclosed by Kunieda. The suggestion/motivation for doing so would have been to use a plurality of users (Hayama paragraph [0006]).

Regarding claim 3, Kunieda and Hayama disclose claim 2, Hayama also discloses independently sets spreading ratios of said high-quality transmit data and said ordinary transmit data (paragraphs [0006] [0059]-[0062 and [0083]-[0089]). Kunieda and Kunieda and Hayama teachings are analogous art because they are from the same field of endeavor of communications. At the time of the invention it would have been obvious to a person of ordinary skill in the art to integrate the spreading discloses by Hayama

with the system disclosed by Kunieda. The suggestion/motivation for doing so would have been to use a plurality of users (Hayama paragraph [0006]).

Regarding claim 4, Kunieda and Hayama disclose claim 2, Hayama also discloses a spreading ratio of said high-quality transmit data greater than a spreading ratio of said ordinary transmit data (paragraphs [0006] [0059]-[0062 and [0083]-[0089]). Kunieda and Kunieda and Hayama teachings are analogous art because they are from the same field of endeavor of communications. At the time of the invention it would have been obvious to a person of ordinary skill in the art to integrate the spreading discloses by Hayama with the system disclosed by Kunieda. The suggestion/motivation for doing so would have been to use a plurality of users (Hayama paragraph [0006]).

Claims 15-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Kunieda as applied to claim 1 above and further in view of Yano (JP 2002094393 A).

Regarding claim 15, Kunieda discloses claim 1, Kunieda doesn't specifically disclose a transmission power setting section that sets transmission power of said high-quality transmit data higher than transmission power of said ordinary transmit data. Yano discloses a transmission power setting section that sets transmission power of said high-quality transmit data higher than transmission power of said ordinary transmit data (abstract paragraphs [0008]-[0022]). Kunieda and Yano teachings are analogous art because they are from the same field of endeavor of communications. At the time of the invention it would have been obvious to a person of ordinary skill in the art to integrate the power control discloses by Yano with the system disclosed by Kunieda.

The suggestion/motivation for doing so would have been to improve the performance of the system (Yano abstract).

Regarding claim 16, Kunieda and Yano disclose claim 15, Yano also discloses sets transmission power of said high-quality transmit data and said ordinary transmit data variably (abstract paragraphs [0008]-[0022]). Kunieda and Yano teachings are analogous art because they are from the same field of endeavor of communications. At the time of the invention it would have been obvious to a person of ordinary skill in the art to integrate the power control discloses by Yano with the system disclosed by Kunieda. The suggestion/motivation for doing so would have been to improve the performance of the system (Yano abstract).

Regarding claim 17, Kunieda and Yano disclose claim 15, Yano also discloses sets transmission power of either said high-quality transmit data or said ordinary transmit data variably. (abstract paragraphs [0008]-[0022]). Kunieda and Yano teachings are analogous art because they are from the same field of endeavor of communications. At the time of the invention it would have been obvious to a person of ordinary skill in the art to integrate the power control discloses by Yano with the system disclosed by Kunieda. The suggestion/motivation for doing so would have been to improve the performance of the system (Yano abstract).

Regarding claim 18, Kunieda and Yano disclose claim 15, Yano also discloses varies transmission power in accordance with channel quality. (abstract paragraphs [0008]-[0022]). Kunieda and Yano teachings are analogous art because they are from the same field of endeavor of communications. At the time of the invention it would

have been obvious to a person of ordinary skill in the art to integrate the power control discloses by Yano with the system disclosed by Kunieda. The suggestion/motivation for doing so would have been to improve the performance of the system (Yano abstract).

Regarding claim 19, Kunieda discloses claim 1, Yano also discloses varies transmission power in accordance with channel quality. (abstract paragraphs [0008]-[0022]). Kunieda and Yano teachings are analogous art because they are from the same field of endeavor of communications. At the time of the invention it would have been obvious to a person of ordinary skill in the art to integrate the power control discloses by Yano with the system disclosed by Kunieda. The suggestion/motivation for doing so would have been to improve the performance of the system (Yano abstract).

Claims 23-28 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kunieda as applied to claims 1 and 31 above, and further in view of Omoto (JP 2001168821 A).

Regarding claims 23 and 37, Kunieda discloses claims 1 and 31, Kunieda doesn't disclose selects said ordinary transmit data so that subcarriers to which part of said ordinary transmit data rearranged by said rearranging section and said high-quality transmit data are allocated are transmitted. Omoto discloses selects said ordinary transmit data so that subcarriers to which part of said ordinary transmit data rearranged by said rearranging section and said high-quality transmit data are allocated are transmitted (abstract, figure 1 paragraphs [0015]-[0022]). Kunieda and Omoto teachings are analogous art because they are from the same field of endeavor of communications. At the time of the invention it would have been obvious to a person of ordinary skill in

the art to integrate the multicarrier allocation discloses by Omoto with the system disclosed by Kunieda. The suggestion/motivation for doing so would have been to improve the performance of the system (Omoto abstract).

Regarding claim 24, Kunieda discloses claim 1, Kunieda doesn't disclose selects said ordinary transmit data so that a number of subcarriers to which said ordinary transmit data is allocated that are transmitted is variable. Omoto discloses selects said ordinary transmit data so that a number of subcarriers to which said ordinary transmit data is allocated that are transmitted is variable (abstract, figure 1 paragraphs [0015]-[0022]). Kunieda and Omoto teachings are analogous art because they are from the same field of endeavor of communications. At the time of the invention it would have been obvious to a person of ordinary skill in the art to integrate the multicarrier allocation discloses by Omoto with the system disclosed by Kunieda. The suggestion/motivation for doing so would have been to improve the performance of the system (Omoto abstract).

Regarding claim 25, Kunieda discloses claim 1, Kunieda doesn't disclose selects said ordinary transmit data so that a number of subcarriers to which said ordinary transmit data is allocated that are transmitted is variable according to channel quality. Omoto discloses selects said ordinary transmit data so that a number of subcarriers to which said ordinary transmit data is allocated that are transmitted is variable according to channel quality (abstract, figure 1 paragraphs [0015]-[0022]). Kunieda and Omoto teachings are analogous art because they are from the same field of endeavor of communications. At the time of the invention it would have been obvious to a person of

ordinary skill in the art to integrate the multicarrier allocation discloses by Omoto with the system disclosed by Kunieda. The suggestion/motivation for doing so would have been to improve the performance of the system (Omoto abstract).

Regarding claim 26, Kunieda discloses claim 1, Kunieda doesn't disclose selects said ordinary transmit data so that a number of subcarriers to which said ordinary transmit data is allocated that are transmitted is variable based on delay distribution information of said transmit data. Omoto discloses selects said ordinary transmit data so that a number of subcarriers to which said ordinary transmit data is allocated that are transmitted is variable based on delay distribution information of said transmit data (abstract, figure 1 paragraphs [0015]-[0022]). Kunieda and Omoto teachings are analogous art because they are from the same field of endeavor of communications. At the time of the invention it would have been obvious to a person of ordinary skill in the art to integrate the multicarrier allocation discloses by Omoto with the system disclosed by Kunieda. The suggestion/motivation for doing so would have been to improve the performance of the system (Omoto abstract).

Regarding claim 27, Kunieda discloses claim 1, Kunieda doesn't disclose selects said ordinary transmit data that is allocated to subcarriers of a predetermined reception level or higher. Omoto discloses selects said ordinary transmit data that is allocated to subcarriers of a predetermined reception level or higher (abstract, figure 1 paragraphs [0015]-[0022]). Kunieda and Omoto teachings are analogous art because they are from the same field of endeavor of communications. At the time of the invention it would have been obvious to a person of ordinary skill in the art to integrate the multicarrier

allocation discloses by Omoto with the system disclosed by Kunieda. The suggestion/motivation for doing so would have been to improve the performance of the system (Omoto abstract).

Regarding claim 28, Kunieda discloses claim 1, Kunieda doesn't disclose selects so that a number of subcarriers to which said ordinary transmit data is allocated that are transmitted is variable in accordance with an adjacent channel interference wave reception level. Omoto discloses selects so that a number of subcarriers to which said ordinary transmit data is allocated that are transmitted is variable in accordance with an adjacent channel interference wave reception level (abstract, figure 1 paragraphs [0015]-[0022]). Kunieda and Omoto teachings are analogous art because they are from the same field of endeavor of communications. At the time of the invention it would have been obvious to a person of ordinary skill in the art to integrate the multicarrier allocation discloses by Omoto with the system disclosed by Kunieda. The suggestion/motivation for doing so would have been to improve the performance of the system (Omoto abstract).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- a) Ehrmann (US 7190730 B2) discloses sending and receiving information, and systems using them
- b) Sudo (JP 2001060934 A) discloses OFDM communications
- c) Uesugi (JP 2002044048 A) discloses OFDM transmitter and receiver

d) Sudo (JP 2001203664 A) discloses OFDM communications.

e) Sato (JP 2002111631 A) discloses radio communications

f) Zhang, "Turbo coding for transmission over ADSL", WCC - ICCT 2000, International Conference on Communication Technology Proceedings, 2000, - ICCT Volume: 1, on page(s): 124-131 vol.1, Meeting Date: 08/21/2000 - 08/25/2000

g) Zhang, "Turbo coding in ADSL DMT systems" ICC 2001, IEEE International Conference on Communications, 2001. Publication Date: 11-14 Jun 2001 Volume: 1, on page(s): 151-155 vol.1. Meeting Date: 06/11/2001 - 06/14/2001.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JUAN A. TORRES whose telephone number is (571)272-3119. The examiner can normally be reached on 8-6 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on 571-272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Juan Alberto Torres
9/29/2008

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